

Forest for a short period in late July and early August, when a splendid emergence of Brimstones and Peacocks and rather smaller numbers of Small Tortoiseshells occurred, and the Purple Hairstreak (*Thecla quercus* Linn.) was in more than usual numbers. The Common Blue (*Polyommatus icarus* Rott.), so scarce in many parts of the country for some years past, appeared sparingly in the Forest in August this year, and was seen in abundance on a West Hampshire down in late August, flying together with large number of Chalk Hill (*Lysandra coridon* Poda) and Adonis (*L. bellargus* Rott.) Blues, the Brown Argus (*Aricia agestis* Schiff.) and some belated Dark Green Fritillaries (*Argynnis aglaia* Linn.), a sight to gladden any butterfly lover's heart.

Although in some respects a rather notable year for our native species, it was certainly not so for the immigrants, the Clouded Yellow, Painted Lady and Red Admiral being all relatively scarce in this neighbourhood. But even in such a favourable year for the natives there was no sign of the more spectacular New Forest butterflies, notably the four species of Fritillary formerly so abundant, reappearing in their former numbers, and it is reasonable to ask why. The most noticeable change that has taken place in the Forest, apart from the much more widespread planting of conifers, is the absence of the bramble from the rides in the inclosures, and the general scarcity in these rides of flowering plants, in particular of the Dog Violet, the foodplant of all four fritillaries. Spraying of the ride verges with a brushwood inhibitor has certainly been carried out in many of the inclosures, to what extent and with what frequency is not known. It is also fairly certain that over-grazing to an ever-increasing extent since the last war by the greatly increased numbers of deer has been an important contributory cause of the scarcity within the inclosures both of the larval foodplant and of the bramble. Similarly, over-grazing outside the inclosures by the ever-increasing numbers of animals enjoying Commoners' grazing rights has contributed to the relative scarcity of some of the heathland species, which have also to compete with more frequent heather cutting and burning as well as with the trampling of the hordes of spring and summer campers

Some Egg Laying and Larval Habits of *Papilio machaon* L. (The Swallowtail Butterfly)

By JOHN McFEELY

Early on 14th June 1970, I set out for the Norfolk Broads with the object of seeing, for the first time, the swallowtail in its natural English habitat. On arrival, disappointment appeared certain as a heavily clouded sky, supplemented by light rain and a constant north east wind was the order of the day. These conditions, quite unlike the glorious weather of the past few days, were to prevail until after my return in the late afternoon.

Even the hardiest butterflies would not venture out in these almost winter-like conditions, so, leaving the net in the boot of the car, I decided to try my luck looking for swallowtail ova. Searching a small and neglected-looking reed bed, one of several found near most of the broads, it did not take long before I found milk parsley (*Pseucedanum palustre*) growing in the reeds. Shortly afterwards I examined a large plant at the

edge of the reeds with several sprays growing outwards and clear of the surrounding vegetation. On one of these sprays I found the first of six ova as a result of the search on these plants, over the next hour. By this time certain factors had emerged regarding the site chosen for oviposition. It appears that the female selects those plants which afford direct and easy access. Close examination of many fine plants which did not enable an easy approach proved fruitless. One particularly fine specimen of milk parsley, several inches taller than myself and therefore over six feet high, had grown clear of the surrounding reeds, and was chosen for the site for two ova.

The dark colour of two of the ova indicated that they would shortly hatch. With a hand trowel I dug up several plants, and returning with these to the car, I noticed a small specimen of *Angelica sylvestris* growing in the short grass on the bank at the edge of the reed bed. Situated on this plant, within an area of less than two square inches, were four ova. I assumed that at least two females had visited this plant as two of these eggs were considerably smaller than the others. This difference in the size was most noticeable even without the aid of a lens.

In order to have the best chance of rearing fine specimens, I was prepared to make further journeys to the broads for foodplant, but in the event only one journey proved necessary. Milk parsley last very well when potted.

After two days, the first larva appeared, and within the next four days all had hatched. In the first, and for part of the second instars the larvae were kept in airtight tins with small cut sprays of milk parsley. Thereafter they were placed in a large breeding cage on growing plants.

On my first visit to the broads, I had noticed several other reed beds a little nearer home. Ten days after my first visit I returned to the previously noted reed beds, and in the few minutes of daylight still remaining, I quickly dug up several milk parsley plants. Examination of these plants revealed four small larvae of this butterfly. Having sufficient for my needs, these were replaced on foodplant in the reed beds. It would appear that 1970 has been a good year for this magnificent creature.

I placed the fresh foodplant already potted, in the breeding cage and left the occupants to themselves. Two hours later I returned to find that several of the larger larvae had transferred to the "new" foodplant, from which they had taken large bites from some of the stems, resulting in the partial collapse of the affected stems. Some too, on attempting to eat the fresh foodplant would immediately wipe their jaws on any nearby surface in an almost frantic attempt to remove the sap from which the plant gets its name. At first these observations seemed to suggest rejection of the fresh foodplant. I then noticed a smaller individual crawl on to the fresh plants and I prepared to watch its every move. Sure enough, immediately after his taking the first bite there followed the frantic jaw wiping behaviour. At this time I also noticed that some of the others were now heartily feeding on the fresh plants.

After ten minutes apparent rest, the individual being watched crawled a few inches down the stalk of the leaf from which it had attempted to eat, to a point where the stalk joined the main stem, at which, just below the join, it made three or four incisions with its jaws. After a few minutes without further movement, it then returned to the leaf from which it had first attempted to eat. Almost immediately it recommenced feeding, only

this time the sap was no longer a problem. The whole process lasted about twenty minutes.

It is a feature of the milk parsley that when a leaf, or, to a lesser extent, a stem is punctured there exudes a blob of tacky milk-like sap which gradually hardens on exposure to the air. The larvae appear not to tolerate this, and make incisions slightly lower down on the plant, which presumably reduce the pressure of the sap to a level which enables the larvae to feed unhindered.

This behaviour continued until the larvae were fully fed although the sap does not seem to trouble the larger larvae to any great extent.

The resultant imagines are the finest marked, and on average the largest I have ever seen. On the whole, I think the little extra effort (and petrol) involved in ensuring a healthy supply of growing milk parsley well worth while.

As a sequel to the above, my fiancée, whilst on holiday with me at Seefeld in Austria, found a second instar larva of this butterfly on wild carrot (*Daucus carota*). On arrival back home, it was placed on milk parsley and exhibited, to a much more marked degree, the same behaviour as observed with the English individuals, which by this time had all pupated, following approximately three weeks in the larval state.

278 Neville Road, Forest Gate, London E.7.

Notes on the Indian Species of the Genus *Paralabis* Burr (Dermaptera : Carcinophoridae)

By G. K. SRIVASTAVA, Calcutta

INTRODUCTION

Burr (1915) erected the genus *Paralabis* for the reception of the following species:—*Nannopygia dohrni* Kirby, 1891; *Anisolabis greeni* Burr, 1899; *Anisolabis pervicina* Burr, 1913 with *Anisolabis owenii* Burr, 1911 as the type species of Srivastava (1969) has established the genus *Aborolabis* with *A. pervicina* as its type.

While studying the members of the family Carcinophoridae from India I have come across two more species of the genus *Paralabis* viz., *Paralabis aborensis* (Burr, 1913) and *Paralabis montshadskii* Bey-Bienko, 1959. On the basis of the shape of parameres, *Psalis lefrovi* Burr, 1910, is also placed under this genus, thus bringing the total to five species from India. Specimens of all the five species, present in the collections of the Zoological Survey of India, Calcutta, have been examined.

In the present paper I have made an attempt to redefine the status of the genus and the species. Brief notes to the species are also given.

DIAGNOSTIC CHARACTERS OF THE GENUS *Paralabis* BURR

Male: Head triangular, longer than broad, sutures faint or obsolete; eyes black or sometimes whitish. Antennae 17 to 19-segmented, dark brown to blackish brown, sometimes a few apical segments whitish, 1st long and conical; 2nd small; 3rd long and cylindrical, slightly longer than 4th and almost equal to 5th; 4th conical or cylindrical; 5th and 6th cylindrical and rest gradually increasing in length. Pronotum quadrat, longer than broad, hind margin rounded, gently widened pos-